

**Notice of Allowability**

Application No.

10/848,759

Examiner

Michael S. Lebentritt

Applicant(s)

FRICKE ET AL.

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Preliminary amendment filed 5/18/04.
2. ☒ The allowed claim(s) is/are 2,3,19-30 and 54-67.
3. ☒ The drawings filed on 18 May 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 5/8/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other east search.

  
MICHAEL S. LEBENTRITT  
PRIMARY EXAMINER

### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: prior art references fail to show: said vertical interconnection extending at least between said first and second planes and initially including an antifuse, and b) subsequently fusing said antifuse to form a continuous electrical connection for electrically coupling said first conductor with at least said second conductor as specified in claim 2. Further: forming a vertical interconnection disposed for connecting said first conductor with said second conductor, said vertical interconnection extending at least between said first and second planes and initially including an antifuse, and subsequently fusing said antifuse to form a continuous electrical connection for electrically coupling said first conductor with at least said second conductor as specified in claim 19. Also: c) forming a vertical interconnection disposed for connecting said first conductor with said second conductor, said vertical interconnection extending at least between said first and second planes and initially including an antifuse, said antifuse being formed by substeps comprising: i) disposing a suitable thin oxide upon said first conductor, and ii) disposing a conductive via material upon said suitable thin oxide whereby a tunnel-junction antifuse is formed, and d) subsequently fusing said antifuse by applying a voltage and current sufficient to form a continuous electrical connection for electrically coupling said first conductor with at least said second conductor as specified in claim 25. Also further: d) forming a vertical interconnection disposed for connecting said first conductor with said second conductor, said vertical interconnection extending at least between said first and second planes and initially including an antifuse, and e) subsequently fusing said antifuse to

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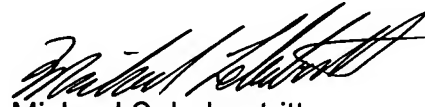
form a continuous electrical connection for electrically coupling said first conductor with at least said second conductor by activating said one of said multiplicity of row conductors and all of said multiplicity of column conductors as specified in claims 54. and 58. Also: d) forming a vertical interconnection disposed for connecting said first conductor with said second conductor, said vertical interconnection extending at least between said first and second planes and initially including an antifuse, and e) subsequently fusing said antifuse by supplying to at least one of said at least one redundant row conductor and said at least one redundant column conductor sufficient voltage and current to form a continuous electrical connection for electrically coupling said first conductor with at least said second conductor as specified in claim 62.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Lebentritt whose telephone number is 571-272-1873. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Lebentritt  
Primary Examiner  
Art Unit 2824

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